

What is claimed is:

1. In a stator coil which comprises:
 - a plurality of segments each of which is received in stator core slots having an even number of receiving positions in a radial direction, thereby constructing one turn in a phase coil in M (integer greater than or equal to 3) phase coils;
 - 5 said segment comprising: a pair of slot conductor portions each of which is received in receiving positions different with each other in a pair of slots distant by a prescribed pitch; a head portion which is projected toward an end of said stator core; and a pair of projected end portions each of which is projected from another end of said stator core;
 - 10 said head portion comprising: a U-shaped head tip portion; and a pair of head oblique portions each of which is stretched obliquely along the radial and axial directions of said stator core;
 - 15 said projected end portion comprising: a pair of end oblique portions each of which stretches obliquely along the radial and axial directions of said stator core; and a pair of end tip portions each of which is formed at a tip of said end oblique portion and is joined with an end tip of different end tip portion,
 - 20 characterized in that said head oblique portions and end oblique portions are made circular-arch-shaped around an axis of said stator core.
- 25 2. The stator coil, according to claim 1, characterized

in that:

each of said slots receives at different receiving positions a plurality of segment sets wherein a larger segment surrounds a smaller segment which is received at 5 adjacent receiving positions;

a group of said segment sets received at the same radial positions and disposed along the circumferential direction forms a group of partial phase coils to which the same phase voltage is applied; and

10 said partial phase coils received at said adjacent receiving positions in a slot are sequentially connected in series, thereby forming said phase coil.

3. The stator coil according to claim 2, characterized in that:

15 a group of slots along the circumferential direction receiving said segments to which the same phase voltage is applied is made a same phase slot group;

a plurality of series phase coil circuit made of said partial phase coils sequentially connected in series are 20 formed in different slots in said same phase slot group; and said series phase coil circuits are connected in parallel, thereby forming said phase coil.

4. In a method for manufacturing a stator coil which comprises the steps of:

25 preparing a plurality of segments each of which comprises a U-shaped head and a pair of parallel legs extending straight from said head;

preparing a plurality of relatively rotating rings

disposed co-axially around an axis of said stator core;

holding along the axial direction end portions of said segments projected by a prescribed axial length from said slots;

5 bending by relatively rotating said rings said end portions obliquely against said axis; and

characterized in that said head portions are bent in order to form a circular-arch-shape around said axis of said stator core by using a cylindrical guide member of which outer circumferential surface touches during relatively rotating said rings said segments at the radial innermost circumference of said slots.

5. In a method for manufacturing a stator coil according to claim 4, which further comprises the steps of:

15 inserting said pair of parallel legs into a pair of slots distant by a prescribed pitch in a stator core; and

joining sequentially said legs adjacent in the radial direction, thereby completing said stator coil,

characterized in that said end portions projected from said slots are bent in order to form a circular-arch-shape around said axis of said stator core by using another cylindrical guide member of which outer circumferential surface touches during relatively rotating said rings said segments at the radial innermost circumference of said slots.